

**WORLDWIDE EMERGING ENVIRONMENTAL ISSUES AFFECTING THE U.S. MILITARY**  
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Environmental Policy Institute

**JULY 2005 REPORT**

Note to Readers: Pages 1-14 comprise the summary and analysis of this report. Expanded details for some items that might not be available via the Internet at a later date are in the Appendix beginning on page 15.

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## **Item 1. Libya Initiates International Conference on Environmental Security for Seas and Oceans**

Building on the “Ocean Security Conference” held in the US Congress in May 1997 and the “Towards Enhancement of Ocean Security in the Third Millennium” conference held in the Swedish Parliament in January 1998, the *International Conference for the Initiative of Environmental Security of Seas and Oceans* was held in Tripoli, Libya, 23-25 July 2005 as the first of three international conferences on the Ocean Security Initiative. It was organized by the Advisory Committee on Protection of Seas and Oceans (ACOPS) under the patronage of the Gadhafi International Foundation for Charities Associations and the Environmental General Authority of Great Jamahiriya. Ocean environment and security experts from 26 countries representing governments, international organizations, NGOs, and the private sector participated. The conference addressed the environmental security issues relating to the seas and oceans from a broad perspective ranging from illegal immigration to transnational organized crime. Participants stressed that international and trans-institutional collective action was required to assure compliance with international terms and standards for improved ocean environmental security.

### **Military Implications:**

Relevant military personnel should review outcomes of the July 2005 conference to determine whether new, relevant issues or opportunities were created. Military-to-military cooperation with Libya should be considered, given Libya’s new international posture. Relevant military personnel should study the Tripoli Declaration on Ocean Security and contact the US Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs and the US Congressional delegation led by Congressman Curt Weldon to explore the range of possibilities for cooperation.

### **Sources:**

Tripoli Declaration on Ocean Security (non-negotiated statement)

<http://www.acops.org/Tripoli%20Declaration%20240705%20final%20final.doc>

Opening of the First International Conference for the Initiative of Environmental Security of Seas and Oceans

[http://en.ljbc.net/online/news\\_details.php?id=987](http://en.ljbc.net/online/news_details.php?id=987)

## **Item 2. Nuclear Theft, Smuggling, and Sabotage Countermeasures**

The recent conference on strengthening nuclear security held in Vienna, Austria, 4–8 July, 2005 adopted Amendments to the Convention on the Physical Protection of Nuclear Material (CPPNM). The original CPPNM applied only to nuclear material in international transport. The amendments substantially strengthen the Convention by providing an expanded system for preventing, combating and punishing nuclear material theft, smuggling and sabotage. The amendments also request expanded cooperation among States regarding rapid measures to locate and recover stolen or smuggled nuclear material, to mitigate any radiological consequences of sabotage, and to prevent and combat relevant offences. The new rules will come into effect once they have been ratified by two-thirds of the 112 States Parties of the Convention. This is expected to take several years.

**Military Implications:**

Relevant military personnel should be prepared to participate in intra-US ratification processes and consider including the new guidelines in its nuclear security plan, and assist other nations in implementing the amended CPPNM, identifying their vulnerabilities, training their staff or even carrying out physical protection work.

**Source:**

States Agree on Stronger Physical Protection Regime

<http://www.iaea.org/NewsCenter/PressReleases/2005/prn200503.html>

**Item 3. UNESCO Draft Declaration on Bioethics and Human Rights**

UNESCO has issued a draft declaration that sets universal ethical guidelines for governments to consider ethical and human rights in science and technology (S&T) policymaking. It covers aspects of human rights, biodiversity, rights of indigenous people, and respect for traditional local resources and knowledge systems. The declaration suggests setting up ethics committees at different levels to assess scientific developments and encourage transparency and public participation in bioethics issues discussions. The draft declaration will be submitted for approval by all 192 UNESCO member states in October.

**Military Implications:**

Military medical, research, procurement and ethics organizations (such as the Joint Services Conference on Professional Ethics – JSCOPE) should evaluate this draft declaration and be prepared to participate in intra-US pre-ratification processes. Although the Declaration doesn't have the power of law, it sets a common international platform for bioethics standards that domestic laws and practices should respect in order to make sure they are in conformity with human rights laws. This common international framework is also intended to encourage States to "take appropriate measures, both at the national and the international level, to combat bioterrorism, illicit traffic in organs, tissues and samples, genetic resources and genetic-related materials." The military should take appropriate measures to implement the Declaration's principles to use "common" language at the international level when dealing with bioethics issues. Also it might consider establishing independent, multidisciplinary and pluralist ethics committees, as set out in Article 19 of the Declaration.

**Sources:**

Towards a declaration on universal norms on bioethics

[http://portal.unesco.org/shs/en/ev.php-URL\\_ID=1883&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/shs/en/ev.php-URL_ID=1883&URL_DO=DO_TOPIC&URL_SECTION=201.html)

Ethics, science and human rights come together

<http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=2218&language=1>

JSCOPE Home Page

<http://atlas.usafa.af.mil/jscope/>

**Item 4. Russia to Destroy All Chemical Weapons Arsenal by 2012**

The Russian government approved a plan to destroy its chemical weapons arsenal by 2012, reported Agence France-Presse in Moscow. Under the proposal, 20% of Russia's 40,000 ton chemical weapons stockpile would be destroyed by 2007, 45% by 2009, and all of it by 2012, meeting its commitment under the Chemical Weapons Convention. "Even though it has the biggest chemical weapons stockpile in the world, Russia has also come up with the safest technologies for disarmament," said Viktor Khristenko, Russia's Industry and Energy Minister. Out of the \$6 billion program, foreign countries are expected to cover \$385 million. Final approval by the Russian government of the chemical weapons disarmament plan is expected before August 15.

**Military Implications:**

Relevant military should explore all possible approaches to share expertise to speed the program's success.

**Source:**

Russia to Destroy Chemical Weapons Arsenal

By Agence France-Presse, Moscow

<http://www.defensenews.com/story.php?F=987059&C=europe>

**Item 5. Technological Breakthroughs with Environmental Security Implications****5.1 Nanobarcodes for Multiple Pathogen Detection**

Scientists in the Department of Biological and Environmental Engineering at Cornell University have developed a rapid, low cost, multiplexed, sensitive and specific molecular detection technique for pathogen DNA that uses fluorescence nanobarcodes to identify the individual potential reactants. A single element in the system comprises a section sensitive to the DNA of a particular target and one containing a bar code identifying it. Multiple elements can be placed on a single test probe. Results can be obtained in 30 minutes.

**Military Implications**

This technique, along with others presented in previous environmental security reports, might be considered for fast pathogens detection systems useful to the military from identification of eventual biological warfare to post-conflict surveying and cleanup. Also, systems based on such techniques could be valuable for surveillance and enforcement of eventual biological treaty violations.

**Source**

Multiplexed detection of pathogen DNA with DNA-based fluorescence nanobarcodes  
Yougen Li, Yen Thi Hong Cu & Dan Luo. Department of Biological and Environmental Engineering, Cornell University, Ithaca, New York 14853-5701, USA

<http://www.nature.com/nbt/journal/v23/n7/abs/nbt1106.html>

## **5.2 International Atomic Energy Agency (IAEA) Inspectors Use Satellite Feeds to Track Sensitive Nuclear Materials**

IAEA is building a global network for monitoring nuclear facilities by using direct satellite information. This will enhance the possibility of real-time tracking of sensitive nuclear materials and checking that they are not being diverted for non-peaceful use. The first field trial connecting a nuclear power plant in Slovakia to IAEA headquarters started in April this year and the results of the feasibility study for a prospective global system are expected by the end of the year. IAEA will be working with the European Space Agency on the system.

### **Military Implication**

Military liaisons with IAEA should seek and offer military expertise where possible to help this global monitoring system enforce uniform global safety standards at nuclear facilities and nuclear material handling sites. [See *Safeguarding radioactive materials is inadequate* in May 2003 environmental security monthly report.]

### **Source:**

IAEA Inspectors Use Satellite Feeds To Track Sensitive Nuclear Materials  
<http://www.iaea.org/NewsCenter/News/2005/satellitefeeds.html>

## **5.3 New Techniques May Help Solve Wind farm/Radar Problem (update)**

A previous item in these reports [*Wind Power vs. Air Defense Radar*, March 2004] reported on the problem arising when return signals from wind farm fans interfered with military aircraft control radar systems. Two new developments offer some hope of solutions to this conflict. BAE Systems in the UK has produced a signal-processing algorithm, which uses fuzzy logic to filter out the returns from the rotating blades, leaving only genuine aircraft tracks. The system will be tested this summer and may be ready in a year. Stealth technology for the moving surfaces is also being investigated as a possible way of hiding the blades from the radar beam.

Another approach is being taken by Grimshaw Architects in association with Windpower Ltd, whose Aerogenerator is a Darius-principle wind turbine with a vertical axis that can be operated at ground level (or rather, sea level, since it's planned for off-shore use.).

### **Military Implications**

Relevant military personnel should stay in touch with these developments, and monitor their geographic areas of responsibility for wind energy plans, so that they can adapt military radar algorithms and to serve as information sources and mediating elements when environment-friendly energy projects and military requirements may conflict.

### **Sources:**

BAE Uses Fuzzy Logic to Make Wind Farms Vanish  
<http://www.enn.com/biz.html?id=757>

A turn for the better. Wind turbines are ugly and no one wants to live near one. Right? Wrong. By Steve Rose, Guardian, Monday July 18, 2005  
<http://www.guardian.co.uk/print/0,3858,5241315-103605,00.html>

## **Item 6. Updates on Previously Identified Issues**

### **6.1 Basel Convention on Hazardous Wastes to be Made More Effective**

The Basel Convention on the Transboundary Movement of Hazardous Wastes and Their Disposal might be strengthened by new proposals prepared for the biannual ministerial conference to be held in late 2006. Issues on the Open Ended Working Group's agenda include used mobile phones, obsolete ships dismantling, furthering the ratification and implementation of the Protocol on Liability and Compensation, mobilizing funds and empowering the Convention's Regional Centers, and drafting technical guidelines for promoting the environmentally sound management of various kinds of hazardous wastes. [See also *Basel Convention on the Transboundary Movements of Hazardous Wastes* of October 2004 and previous environmental security scanning reports on the Basel Convention.]

#### **Military Implications:**

It is likely that the spectrum of the Basel Convention on the Transboundary Movements of Hazardous Wastes will be extended to cover the new waste management problems. The military should follow the work of the Open Ended Working Group for preparing the 2006 biannual ministerial conference both to give its input and to be prepared for eventual new developments. Also, under the partnership principle, the military and its contractors should initiate partnerships and programs for environmentally sound wastes management.

#### **Sources:**

Press advisory for the OEWG4 - Basel Convention talks to address mobile phones, obsolete ships and new guidelines for the environmentally sound management of wastes

<http://www.basel.int/press/paOEWG4.doc>

Secretariat of the Basel Convention

<http://www.basel.int/>

### **6.2 New Protected Ecological Sites**

#### Seven New Sites Added to World Heritage List

The UN World Heritage Committee included 7 more natural sites on UNESCO's World Heritage List, expanded 2, and removed 3. The 7 new sites inscribed are: South Africa – Vredefort Dome; Egypt - Wadi Al-Hitan Whale Valley; Japan – Shiretoko; Norway – West Norwegian Fjords Geirangerfjord and Nærøyfjord; Mexico - Islands and Protected Areas of the Gulf of California dolphins; Thailand - Dong Phrayayen - Khao Yai Forest Complex; Panama - Coiba National Park and its Special Zone of Marine Protection. The two extensions are: India – Valley of Flowers National Park; and UK—St Kilda. The sites removed from the List of World Heritage in Danger List are: Sangay National Park in Ecuador, Timbuktu in Mali, and Butrint in Albania. Altogether, UNESCO World Heritage List numbers 160 natural sites and 24 mixed sites—both natural and cultural.

#### UN Ecological Reserves Network Adds 22 New Sites

The World Network of Biosphere Reserves, under the Man and the Biosphere (MAB) Programme of UNESCO, added 23 ecosystems to its list, for a total of 482 sites in 102 countries. At these reserves, communities promote sustainable development while also conserving biodiversity. The community members also contribute to governance, management, research, education, training and monitoring at the sites.



[See also *Nine New Hotspots Added to World's Protected Areas* in February 2005, *Intensified Efforts Needed to Save Biodiversity* in January 2005, and related items on UNESCO World Heritage Sites in November and June 2004, and October 2003 environmental security monthly reports.]

**Military Implications:**

[Similar to previous reports on the same issue] The military should keep up-to-date with the list of protected sites and have its operations planned accordingly. Citing the Army's new "Strategy for the Environment," the military should seek new opportunities to participate in dialogues among scientists, politicians, environmental NGOs, and economic decision-makers for improving biodiversity management strategies as well as in planning its own operations.

**Sources:**

Seven Natural Wonders Inscribed on World Heritage List

<http://www.ens-newswire.com/ens/jul2005/2005-07-15-06.asp>

Twenty-three New Biosphere Reserves Added to UNESCO's Man and the Biosphere (MAB) Network

[http://portal.unesco.org/unesco/ev.php?URL\\_ID=28229&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201&reload=1120062522](http://portal.unesco.org/unesco/ev.php?URL_ID=28229&URL_DO=DO_TOPIC&URL_SECTION=201&reload=1120062522)

**6.3 Progress on Efforts to Tackle Climate Change****G8 Environmental Results Are Limited to Post-2012 Concerns**

Although the Gleneagles meeting of the G8 industrialized nations did not generate measurable targets and timetables for tackling greenhouse gas emissions, the heads of government of the world's eight wealthiest nations agreed that "climate change is happening now, that human activity is contributing to it, and that it could affect every part of the globe." They also set the stage for dialogues for post-Kyoto regulations that would include the US and other high-emitting countries such as China and India. The dialogues are planned to start with a meeting in London in November to be organized by the British government.

**Military Implications**

If not yet involved, the military environmental community should set up liaison with the US delegation to the November dialogues to ensure that its concerns are taken into account in those proceedings, and should also follow the progress and results of the meeting, in order to be prepared for future international agreements that may come about from these efforts.

**Sources:**

More than hot air. The G8 summit made quiet progress on climate change

*The Economist*, Science & Technology, Global warming. Jul 14th 2005

[http://www.economist.com/research/articlesBySubject/displayStory.cfm?amp;emailauth=%2527%25290%253A04%255COOV1%25254%250A&fsrc=nwl&subjectid=348924&story\\_id=4174286&login=Y](http://www.economist.com/research/articlesBySubject/displayStory.cfm?amp;emailauth=%2527%25290%253A04%255COOV1%25254%250A&fsrc=nwl&subjectid=348924&story_id=4174286&login=Y) (by subscription only; full text in the [Appendix](#))

Investment in Forests, Rivers and Wetlands Will Pay Dividends, UN Environment Chief Tells G8 Leaders

[http://www.enn.com/aff\\_PF.html?id=739](http://www.enn.com/aff_PF.html?id=739)



### G8 Climate Plan Of Action Delivers Little Change

<http://www.ens-newswire.com/ens/jul2005/2005-07-08-02.asp>

### U.S., Australia, and Asia-Pacific Countries Coalition for Clean Development

The Asia-Pacific Partnership on Clean Development and Climate founded by the U.S., Australia, China, India, Japan, and the Republic of Korea, aims to address energy security, air pollution, and climate change issues based on cooperation in the development, implementation, and exchange of new, clean technologies. The joint Vision Statement was issued at the Association of Southeast Asian Nations' annual ministerial meetings in Vientiane, Laos. The six countries combined represent more than half of the world's economy, population, and energy use, and are responsible for half of the world's greenhouse gas emissions. This initiative is "a complement, not an alternative," to the 1992 United Nations Framework Convention on Climate Change and the 1997 Kyoto Protocol, said U.S. Deputy Secretary of State Robert Zoellick.

#### **Military Implications:**

Considering that the partnership includes the two most populated countries and emerging polluters, achievement of their energy security and green gas reduction is an important part of global security in general, and of the Pacific region in particular. This is one more initiative that should encourage all sectors (including the military) to contribute the best they can to improve clean energy production.

#### **Sources:**

Australia Joins New Asia-Pacific, Partnership On Clean Development And Climate

[http://www.pm.gov.au/news/media\\_Releases/media\\_Release1482.html](http://www.pm.gov.au/news/media_Releases/media_Release1482.html)

Asia-Pacific Countries Join U.S., Australia to Control Climate

<http://www.ens-newswire.com/ens/jul2005/2005-07-28-04.asp>

### **6.4 New Developments for Addressing Natural Disasters**

The UN will be organizing the 3rd International Early Warning Conference in Bonn from 27 to 29 March 2006. Guided by the motto 'From Concept to Action,' the conference aims to implement the 'Hyogo Framework for Action 2005-2015,' (adopted at the World Conference on Disaster Reduction in Kobe, Japan, January 2005) and set short- and long-term early warning projects and address high priority needs mostly in critical countries and regions. The conference is expected to be attended by over 600 representatives of governments, parliaments and international organizations, as well as practitioners and members of the scientific community.

Meantime, the UN World Meteorological Organization (WMO) decided to increase its role in natural disaster mitigation, particularly for helping the world's least developed countries. The program will be mainly based on better implementation and use of latest the S&T in the domain of weather forecast, climate and water, and cooperation with other international organizations that work in disaster risk and preparedness area.

#### **Military Implications:**

The military, as an important pillar in post-disaster situations, should take an active part in all the disaster risk assessment and preparedness discussions, both for know-how and expertise sharing,

as well as be part of the design team for the best capacity-building efforts, and programs to deal with disaster prediction and mitigation.

**Sources:**

Welcome to the website of the Third International Conference on Early Warning (EWC III)

<http://www.ewc3.org/>

UN announces new conference on early warning systems against natural hazards

<http://www.un.org/apps/news/story.asp?NewsID=15150&Cr=early&Cr1=warning>

UN weather agency outlines ambitious programme in natural disaster mitigation

<http://www.un.org/apps/news/story.asp?NewsID=15036&Cr=climate&Cr1=change>

**6.5 E-waste Directives to be Enforced in the UK**

The two EU directives on E-waste will be enforced by UK legislation. The Waste Electrical and Electronic Equipment (WEEE) Directive is expected to be enforced by UK law on August 13, 2005. The WEEE Directive of the EC sets a recycling framework for electrical and electronic equipment in order to minimize the impacts of this kind of waste on the environment. The related directive on the Restriction of the use of certain Hazardous Substances (RoHS) in electrical and electronic equipment bans the use in manufacture after July 1, 2006 of certain hazardous substances (lead, cadmium, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenylethers (PDBEs)). The two directives on E-waste are already in force at EU level and were supposed to be added to EU Members legal system with rules for monitoring compliance by August 2004. [See *Two E-waste laws entered into force in the European Union (EU)* in February 2003 environmental security report.]

**Military Implications:**

The military deployed in the EU Member States should make sure it is prepared to comply with the WEEE and ROHS directives, as “producers” include not just manufacturers, but also importers and exporters of electrical and electronic equipment into the UK. Recycling of electric and electronic equipment and substitution of hazardous substances should be considered, if not already in force.

**Sources:**

The WEEE Legislation

<http://www.weeedirectory.com/the+weee+legislation.aspx>

Directive on Restrictions of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS)

[http://www.weeedirectory.com/Portals/0/Reports/finalrohs\\_directive.pdf](http://www.weeedirectory.com/Portals/0/Reports/finalrohs_directive.pdf)

**6.6 Conclusions on Health and Environmental Impact of 1990-1991 Gulf War**

Researchers from the Harvard School of Public Health (HSPH) revealed the findings of Phase I of their study on the implications on the health of Kuwaiti civilians who remained in Kuwait during Iraq's 1990 invasion and occupation. The investigations followed for 14 years the health condition of 5,000 Kuwaitis over the age of 50 to assess likely mortality impacts of exposure to smoke from the oil fires and also reviewed trends in morbidity and mortality data from Kuwait's Ministry of

Health. The conclusions show that an average individual risk on the order of 2/10,000 may be attributable to exposure to smoke from the oil fires. Screening assessing risks connected to other contaminants -- such as volatile organic compounds, polycyclic aromatic hydrocarbons and metals from the oil lakes and marine oil spills; and depleted uranium – also indicated low risks to public health. [See also item 8.2 *Study by Sandia on Depleted Uranium* further in this report]

The fifty-sixth session of the Governing Council of the United Nations Compensation Commission (UNCC) concluded the assessment of compensations related to Iraqi 1990 invasion. Some argue that the denial of billions of dollars in compensation to some countries for adverse health and environmental effects of the 1990-1991 Gulf War sets a dangerous precedent to discourage future targeting of natural resources and the environment in future wars.

Nevertheless, it is worthwhile to note that the fifth (and last) installment under category “F4”—environmental claims—involved 19 claims filed by six Governments, out of which eight claims filed by four Governments were approved by the Council for compensation, with a total award value of over \$252 million.

### **Military Implications:**

The Iraqi example is a basis and sets a precedent for compensation for the environmental and public health consequences of conflict between nations. As controversy over the compensations continues, pressure could mount for new international regulations that would create a clear framework for assessment, consequences, and compensations/liabilities for the responsible countries.

### **Sources:**

Public health impact of 1990 Iraq invasion of Kuwait

<http://www.medicalnewstoday.com/medicalnews.php?newsid=26891>

A summary of the report and list of contributing scientists is available at:

<http://www.hsph.harvard.edu/press/releases/kuwait/kuwait.doc>

UN Denial of Billions in Gulf War Health Compensation Denounced

<http://www.ens-newswire.com/ens/jul2005/2005-07-25-01.asp>

Governing Council Of United Nations Compensation Commission Has Concluded Its Fifty-Sixth Session

[http://www2.unog.ch/uncc/pressrel/pr\\_56c.pdf](http://www2.unog.ch/uncc/pressrel/pr_56c.pdf)

## **6.7 GMOs Controversy Continues**

### **FAO calls for an international framework for GM trees**

Genetic modification activities in forestry are taking place in some 35 countries and a commercial phase has already started without full scrutiny of potential benefits and risks. FAO says it is essential that environmental risk assessment studies be conducted with protocols and methodologies agreed upon at national and international levels.

### **Military Implication**

Before using GM trees as an option in post-conflict remediation, a risk-assessment of their impact should be conducted to avoid damages to biodiversity. The military should continue to follow the discussions on GMOs and developments of eventual international frameworks.

**Sources:**

UN body urges caution over GM Trees

<http://www.scidev.net/content/news/eng/un-body-urges-caution-over-gm-trees.cfm>

Biotechnology in forestry gaining ground

<http://www.fao.org/newsroom/en/news/2005/104906/index.html>

**GM Crops Created Superweed**

Scientists from the Centre for Ecology & Hydrology in the UK argue that there is a potential that modified genes from GM crops could transfer into local wild plants, creating herbicide-resistant "superweeds." The findings of their four-year study were recently made public. The phenomenon was observed in a trial where cross-fertilization between GM oilseed rape, brassica, and a distantly related plant, charlock, created a new form of charlock that didn't react to lethal herbicide. The same was demonstrated in the lab for other weeds that became herbicide resistant. Although they consider that the potential of such cross-fertilization in the field is likely to be very low, they add that "this unusual occurrence merits further study in order to adequately assess any potential risk of gene transfer." [See also *The Controversies over GMO Bans Continue* in June 2005 and other previous environmental security reports.]

**Military Implications:**

This discovery and disclosure might provide more reasons for nations that are already worried about GMOs to increase their countries' verification procedures for different varieties of GMO. Hence, methods should be created for GMO product procurement/acceptance and for inspecting overseas shipping of GMO-containing products to determine compliance with GMO regulations of the receiving country.

**Sources:**

GM crops created superweed, say scientists

Paul Brown, environment correspondent. Guardian, Monday July 25, 2005

<http://www.guardian.co.uk/print/0,3858,5246601-103528,00.html>

Monitoring movement of herbicide resistant genes from farm-scale evaluation field sites to populations of wild crop relatives, July 26th 2005

<http://www.ceh.ac.uk/news/index.html#fse>

**6.8 Discussions over World War II Japanese Warfare Program in China not Settled Yet**

The chemical weapons left over by the Japanese invading army during World War II are still realistic threats to the Chinese people and environmental security, say Chinese officials urging Japan to take more measures to accelerate the process of destroying them. Chinese Foreign Ministry spokesman Liu Jianchao demands that the Japanese government follow the Convention on the Banning of Chemical Weapons and the memorandum on the destruction of chemical weapons reached between the two governments.

Recently, Japan rejected China's demands for apology and compensation for damages caused by the Japanese germ warfare program during World War II. Chinese Foreign Ministry said, "Germ warfare was one of the serious crimes of the Japanese militarist period during World War II... The Japanese government should properly deal with this problem by using an honest attitude,

undertaking its full responsibilities and handling conscientiously the reasonable demands of the injured people.” The lawsuit has uncovered information about Japan’s biological warfare program kept secret by Japan’s government and the United States following World War II, says the Associated Press. For instance, the Unit 731 base near the Chinese city of Harbin may be responsible for as many as 250,000 deaths in the 1930s and ‘40s during the Japanese occupation of China. [See also *China: Japan to Pay \$2.7 Million for War Gas Leak* in October 2003 and *Effects of Poison Gas Used in WWII by Japan* in May 2003 environmental scanning reports]

**Military Implications:**

[Same as in previous reports on similar issues] This is one more event that builds the case for an agreement for universal and ethical treatment of health damages induced by the use of chemical, biological or radiological weapons. The military should consider collaboration with diplomatic personnel on drafting provisions in anticipation of such an agreement, and continue developing antidotes for such weapons.

**Sources:**

China urges Japan to accelerate process of destroying abandoned chemical weapons (Xinhua)  
[http://english.people.com.cn/200506/28/eng20050628\\_192893.html](http://english.people.com.cn/200506/28/eng20050628_192893.html)

China Wants Japan to Respond to Germ Warfare Victims  
[http://www.nti.org/d\\_newswire/issues/2005\\_7\\_20.html#A28FCD5A](http://www.nti.org/d_newswire/issues/2005_7_20.html#A28FCD5A)

## **6.9 Europe to Harmonize Marine Pollution Legislation**

Regulations on marine pollution from ships will be harmonized for all 25 EU member states. The new Directive, considers pollution discharging from ships in coastal waters or the high seas a crime, whether by intention or by negligence. The European Council of Ministers was expected to adopt legislation this month that defines both marine pollution crimes and harmonizes the level of penalties. However, these were not yet adopted at the time of this writing. Penalties for these crimes will be much higher than current fines. Enforcement will be through countries’ collaboration in identifying pollution cases and synergies among enforcement authorities, including national coast guards and criminal justice organizations.

**Military Implications:**

Relevant military personnel should be alert to both changes that add requirements or simplify them. Although international law limits this Directive’s power to ships that enter an EU port, increased international cooperation could generate new regulations and marine environmental pollution monitoring systems elsewhere. [See also *Improved Cooperation Among International Organizations to Fight Marine Pollution* in March 2005 and *International Maritime Organization (IMO) wants global rather than many different local or regional rules* of January 2003 environmental security monthly reports.]

**Source:**

Europe Unites Against Marine Polluters  
<http://www.ens-newswire.com/ens/jul2005/2005-07-11-04.asp>

## Item 7. Reports to Review

### **7.1 Environmental concerns increase opportunities and challenges for business (Millennium Ecosystem Assessment report 4)**

*Ecosystems and Human Well-being: Opportunities and Challenges for Business and Industry*, the fourth Millennium Ecosystem Assessment (MA) report, synthesizes and integrates findings related to the interdependence between ecosystems and the private sector. “The Millennium Assessment is a user’s guide to the planet for long-term thinkers... an invaluable resource for business leaders who think long term and seek to understand the threats and opportunities that will shape the economies of the future.” said Jane Lubchenco, co-chair of the Synthesis Team. [See also items 9.1 *Biodiversity Synthesis Report (Millennium Ecosystem Assessment 2)* of May, 8.7 *Human Footprint on Earth Ecosystem at Critical Stage and Millennium Ecosystem Assessment Synthesis Report* of March 2005, and 9.3 *Desertification Synthesis* of June 2005 environmental security monthly reports.]

#### **Military Implications**

[Same as previous monthly reports on the MA] The findings of this report reinforce and add to the previous reports of this kind. The military should review the report’s findings and analyze their probable effects on military planning, training and operations. It is likely that these findings will lead to new international restrictions protecting the biosphere from human-caused damage.

#### **Sources:**

Environmental concerns increase opportunities and challenges for business

<http://www.millenniumassessment.org/en/Article.aspx?id=70>

Ecosystems and Human Well-being: Opportunities and Challenges for Business and Industry

<http://www.millenniumassessment.org/proxy/document.353.aspx>

Millennium Ecosystem Assessment

<http://www.millenniumassessment.org/en/index.aspx>

### **7.2 Study by Sandia on Depleted Uranium (DU)**

Sandia National Laboratories has completed a study assessing health risks associated with accidental exposure to depleted uranium (DU), using as a case study the 1991 Gulf War. The two-year study, *An Analysis of Uranium Dispersal and Health Effects Using a Gulf War Case Study*, used mathematical modeling to estimate eventual health risks both on troops and civilians. The study’s findings are consistent with other U.S. studies on the same issue: there are no proofs of serious health risks implied from use of DU in combat. Closer exposure might enhance some risks, but at low level of probability. The report recommends monitoring of those exposed in close proximity or by handling DU, as well as considering conservative guidelines for uranium workers. [See also *Claims of Radioactive Battlefields in Iraq need more scientific ground* in August 2003, *Depleted Uranium Controversy Continues* in July 2003, and *Health Research Updates on Depleted Uranium Inconclusive* in June 2003 environmental security reports.]

#### **Military Implications:**

This study, along with the others on the same line could be considered for updating the AEPI report on DU, one of the most widely cited US military sources on DU.



**Sources:**

An Analysis of Uranium. Dispersal and Health Effects. Using a Gulf War Case Study

By Albert C. Marshall, Sandia National Laboratories

<http://www.sandia.gov/news-center/news-releases/2005/all/snl-dusand.pdf>

Sandia completes depleted uranium study—Press Release

<http://www.sandia.gov/news-center/news-releases/2005/all/depleted-uranium.html>

**7.3 IAEA Annual Report for 2004**

The annual report of the UN atomic watchdog calls for global cooperation on all nuclear issues—from countering the threat of nuclear and radiological terrorism to preventing nuclear weapons proliferation, and meeting a growing energy demand. The report is a comprehensive overview of the Agency's work in 2004 in its three main domains: technology, safety and verification, also presenting prospects for future developments. It highlights that although attention to security of nuclear and other radioactive material and associated technologies increased significantly in recent years, international cooperation is essential to strengthen all countries' preparedness to respond properly to the threat of nuclear and radiological terrorism and to build regional and global networks for combating transnational threats. The report notes that out of the over 650 confirmed incidents of trafficking in nuclear or other radioactive material recorded since 1993, the highest number of incidents—121 (of which 11 involved nuclear material) were in 2004. The report will be presented at the IAEA General Conference to be held in Vienna beginning 26 September. Other IAEA reports and documents prepared for the Conference will be made available as they are published.

**Military Implications:**

Since nuclear security is mainly a national responsibility, the Annual report along with other IAEA documents should be reviewed by military and relevant agencies for improving and strengthening anti-nuclear preparedness and increasing general nuclear safety around the world.

**Sources:**

IAEA Annual Report for 2004

<http://www.iaea.org/Publications/Reports/Anrep2004/index.html>

IAEA Issues Annual Report for 2004

[http://www.iaea.org/NewsCenter/News/2005/annual\\_report2004.html](http://www.iaea.org/NewsCenter/News/2005/annual_report2004.html)

**7.4 Nanotechnology: Environmental Implications and Solutions**

According to a review in US National Institute of Health's (NIH) Environmental Health Perspectives, this new book "gives an excellent summary of traditional environmental pollution issues", but "may disappoint those who expect dramatic revelations about nanoparticles as pollutants". One chapter gives a good summary of the production and applications of nanomaterials, but in general the work is wanting in nano-specific information, except, to some extent, in the section on air pollution (albeit with several errors).



**Military Implications**

The work may be useful as an introduction to pollution problems in general, but members of the military environmental community wanting detailed technical guidance on nano effects will have to look elsewhere.

**Sources:**

Nanotechnology: Environmental Implications and Solutions. Book Review

<http://ehp.niehs.nih.gov/docs/2005/113-7/newbooks.html>

Nanotechnology: Environmental Implications and Solutions

By Louis Theodore and Robert G. Kunz

Hoboken, NJ: John Wiley & Sons, 2005. 378 pp. ISBN: 0-471-69976-4, \$99.95 cloth

**7.5 Update on more efficient vehicles: Program of the FreedomCAR and Fuel Partnership**

Copies of “Review of the Research Program of the FreedomCAR and Fuel Partnership” will be available this fall from the National Academies Press (202-334-3313 or 1-800-624-6242 or order on the Internet at <http://www.nap.edu>)

**Military Implications**

Military personnel involved in planning purchases of future vehicles should request this report.

**Source:**

Clear Vehicle Research Initiative, National Academy of Sciences

<http://www4.nationalacademies.org/news.nsf/isbn/0309097304?OpenDocument>

## APPENDIX

### Reference Details

This Appendix contains the full text for the articles that are not available on the Internet or are usually stored for a limited time on the respective Web sites.

### Item 6. Updates on Previously Identified Issues

#### 6.3 Progress on Efforts to Tackle Climate Change

##### **The G8 summit made quiet progress on climate change**

From The Economist print edition

SCIENCE & TECHNOLOGY. Global warming

More than hot air

Jul 14th 2005

[http://www.economist.com/research/articlesBySubject/displayStory.cfm?amp;emailauth=%2527%25290%253A04%255COOV1%25254%250A&fsrc=nwl&subjectid=348924&story\\_id=4174286&login=Y](http://www.economist.com/research/articlesBySubject/displayStory.cfm?amp;emailauth=%2527%25290%253A04%255COOV1%25254%250A&fsrc=nwl&subjectid=348924&story_id=4174286&login=Y) (by subscription only)

TONY BLAIR had promised to make climate change one of the top issues at the G8 summit held last week in Scotland. Despite the distraction of bombs in London, he stuck with the plan. And, in the event, he persuaded George Bush—the *bête noire* of the climate crowd—to sign a statement that appears to take climate change seriously.

Yet many greens still labelled the summit a failure. It is true that the leaders did not agree to any firm new targets for reducing greenhouse gases and Mr Bush certainly did not embrace the Kyoto treaty, which binds signed-up countries to cut their emissions. Even so, the summit made some progress.

Much has been made of the G8 leaders' statement agreeing that global warming is really happening and Mr Bush's unprecedented acknowledgment that mankind's actions are indeed playing an important role in it. In fact, those were not the most important outcomes. The Bush administration has acknowledged on numerous occasions that global warming is real and caused partly by humans. The snag is that when the cameras have gone, White House officials have quietly censored scientific reports to emphasise lingering uncertainties and blocked progress on climate policies in other artful ways.

The summit's real advance appeared rather banal: the promise of a new “dialogue” on climate policy among the G8 and a handful of large and populous developing countries. These talks are meant to focus on what to do after 2012, when the first round of the UN's Kyoto treaty expires.

Some have already criticised this approach for bypassing the UN's formal climate-negotiations process. Others grouse that there is no mention of Kyoto-style emissions targets or timetables.

Actually, this dialogue could turn out to be important precisely for those reasons. Anything that resembles Kyoto has no chance of winning American approval. But a smaller group that includes China and India could well persuade America to act on climate. Prior to the summit, America had refused even to discuss what should happen after 2012.

The first meeting of the new climate dialogue is due to take place in London in early November. So it is just possible that cosy talks among some of the world's biggest emitters might pave the way for a lasting breakthrough on global warming.